



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/711,841

10/08/2004

G. R. Mohan Rao

A4-1845

5840

27127 7590 08/31/2007  
HARTMAN & HARTMAN, P.C.  
552 EAST 700 NORTH  
VALPARAISO, IN 46383

EXAMINER

LE, THONG QUOC

ART UNIT

PAPER NUMBER

2827

MAIL DATE

DELIVERY MODE

08/31/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/711,841

Applicant(s)

RAO ET AL.

Examiner

Thong Q. Le

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7-21,23-28 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-5, 7-8, 11-21, 23-28,30 is/are allowed.
- 6) ☒ Claim(s) 9 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Amendment filed on 06/28/2007 has been entered.
2. Claims 1, 3-5, 7-21,23-28,30 are presented for examination.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 3-5,7-21,23-28,30 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims sdlfk are rejected under 35 U.S.C. 102(e) as being anticipated by Gustavson et al. (Pub. U.S. Patent No. 2003/0126356).

Regarding claims 9-10, Gustavson et al. disclose a semiconductor memory device (Figure 5A) comprising a bank (Figure 5A, 511a) with multiple pages, the device comprising means ([0062], PgRd, PgW) for keeping multiple pages open on the bank ([0036], previously opened pages of memory), wherein the keeping means comprises latches coupled to a sense amplifier associated with the bank, the latches operating in the storage of data read-from and written-to the sense amplifier ([0061-0062]), wherein the device is a nonvolatile memory device with multiple pages open in a block or sector thereof, and wherein the device is a flash memory device ([0031]).

***Allowable Subject Matter***

6. Claims 1,3-5, 7-8, 11-21,23-28,30 are allowed.

Claims 1,3-5, 7-8, 11-21,23-28,30 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Gustavson et al. (Pub. U.S. Patent No. 2003/0126356), and others, does not teach the claimed invention having a semiconductor memory device comprising a bank with multiple pages, the device comprising means for keeping multiple pages open on the bank, wherein the keeping means comprises latches coupled to a sense amplifier associated with the bank, wherein the keeping means is operative to post a precharge command immediately after a command for a first access of one of the multiple pages in anticipation of a subsequent access of the page, the keeping means keeping the page open for a number of clock cycles and the precharge command causing a precharge operation to

Art Unit: 2827

be executed after completion of the number of clock cycles, the latches operating in the storage of data read-from and written-to the sense amplifier, and a semiconductor memory controller operable to issue commands to a memory module comprising multiple memory integrated circuits with memory cells arranged in arrays of rows and columns defining multiple pages, the memory controller comprising means for performing a posted precharge operation immediately after a command for a first access of a page in anticipation of a subsequent access of the page, wherein the memory controller further comprises sense amplifiers and a SRAM register coupled to the sense amplifiers to provide low column access latency.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Le whose telephone number is 571-272-1783. The examiner can normally be reached on 8:00am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarabian Amir can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2827

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thong Q. Le  
Primary Examiner  
Art Unit 2827

A handwritten signature in black ink, appearing to read 'Thong Q. Le', is written over the printed name and title.